

CLAIMS

1. A wind power installation comprising a SODAR system which is mounted to the pod of the wind power installation and which detects the region in front of the rotor of the wind power installation.

5 2. The wind power installation according to claim 1 wherein the SODAR is preferably mounted in the region of the rotor hub of the wind power installation, preferably in front of the plane of the rotor of the wind power installation.

10 3. The wind power installation according to claim 1 characterized in that the SODAR measures the wind conditions in front of the rotor and transmits corresponding measurement data to a control of the wind power installation, which in turn, when particularly undesirable wind conditions occur, for example when gusts occur, suitably alters the angle of attack of the rotor blades, in order thereby to protect the entire 15 installation from unwanted loadings and damage.

15 4. An early-warning system for protecting wind power installations in a wind park, comprising:

means for measuring the wind conditions in the region of a first wind power installation, and means for processing the measured data are processed by a control device which controls the first wind power installation and/or another second wind power 20 installation in the proximity of the wind power installation, wherein the control involves in particular adjustment of the angle of attack of the rotor blade with respect to the wind (pitch) and adjustment of the angle of attack is effected as soon as a wind condition endangering the first wind power installation is measured.

25 5. The wind park comprising a plurality of wind power installations according to claim 4, wherein the measurement data of a first wind power installation of

the wind park, which is first exposed to the wind, are transmitted to at least one second wind power installation which in the direction of the wind is behind the first wind power installation, and the second wind power installation in the wind shadow of the first wind power installation is controlled in dependence on the measured data about the wind
5 condition in the region of the first wind power installation.

6. A method of controlling one or more wind power installations wherein anticipatory detection of the wind speed is effected for a first wind power installation and control of the wind power installation, in particular the angle of attack of the rotor blades, is effected in dependence on the detected wind speed and/or wind
10 direction.

7. The method according to claim 6 characterized by detection of the spatial and/or temporal distribution of the wind speed, in particular for detecting gusts of wind in the entire or local region of the wind power installation or installations.

8. The method according to claim 6 characterized by detection of the
15 wind speed by devices which are arranged at one or more predetermined wind power installations of a group of wind power installations.

9. The method according to claim 6 characterized in that each individual wind power installation is controlled in anticipatory mode having regard to the detected wind speed and/or wind direction.

20 10. The method according to claim 6 characterized in that the control instructions for the wind power installations are produced at the wind power installation itself or by a central control.

11. The method according to claim 6 characterized in that the information in respect of the wind conditions (wind speed, wind direction) are communicated between wind power installations wirelessly or by way of a line.

12. A wind power installation comprising a device for detecting the
5 wind conditions in the region of the wind power installation characterized by a device for transmitting/receiving wind speed and/or wind direction information to/from at least one of the further wind power installations in the wind park.

13. A wind power installation comprising a device for detecting the wind conditions characterized in that the device for detecting the wind speed operates with
10 sound waves, preferably with ultrasonic waves in the manner of a SODAR.

14. A wind power installation according to claim 13 characterized in that the device for detecting the wind speed is arranged at least in part in the region of the pod of the wind power installation.

15. A wind power installation according to claim 14 characterized in that
15 the device for detecting the wind speed three-dimensionally detects the wind speed.